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(54) Title: THERAPEUTIC EXERCISE SYSTEM AND METHOD FOR A PARALYZED AND NONPARALYZED NEUROMUSCULOSKELETAL TRAINING SYSTEM

(57) Abstract: The present invention relates to an exercise method for the elderly, individuals with impaired joint control, and a system for individuals who are suffering from muscular paralysis and who may or may not be confined to a wheelchair by the implementation of an exercise device that can safely provide actively supported standing exercise options to persons who either have limited physical mobility or complete loss of mobility due to muscular paralysis. An embodiment of the present invention relates to a standing wheelchair that is used to passively restrain an operator. The axial and tangential loads that are exerted upon the skeletal system of the operator are derived and recorded from a force-sensing device. Further, an angle or position sensor is situated in contact with the standing wheelchair or standing exercise system in such a manner that the standing angle of an individual or the angle of the standing wheelchair can be logged and stored for long periods of time. Muscle force, through electrical stimulation or voluntary exercise can also be logged and stored in both the standing wheelchair application and in the stationary standing frame application.

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